SIL

SMART INTEGRATED LOGISTICS

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Based on the German model, Research Institute for Smart Integrated Logistics (SIL) is the first such initiative in Pakistan to holistically address integrated logistics domains hrough applied research and living labs at the industry. SIL aims to address challenges and provide solutions for the immediate benefit for companies and networks. Tailored interdisciplinary teams deliver cross-industry and customer-specific Logistics Research and further support in delivering Strategies, Planning, Management and Execution solutions. The initial cross-domain focus areas are CPEC and Beyond Multimodal Logistics Harmonization (Rail, Road, Air and Sea), Maritime Logistics and Services Excellence, Industrial & Defense Supply Chain Management and Integrated Industrial Zones. Further domains under SIL include, supply network design, fleet management, materials handling, warehouse management, simulation supported business, traffic systems, intelligent logistics, infrastructure logistics, green logistics and digital logistics. Made-to-measure teams create crossindustry and customer-specific solutions in the area of Smart Integrated Logistics. SIL has 20 direct staff, and for interdisciplinary projects, the Institute can draw a large number, about 16,000 staff, from affiliated local (Islamabad, Lahore, Karachi, Gwadar) and an extended international network of collaborating institutes in Europe, Americas, Australia and Africa.

SALIENT FEATURES

Industrial Cases and Adoption: To identify, package and execute the industrial solutions and their take-up, and to ensuring economic, business and social impact

Software Simulations and Solutions: To develop, enhance and deploy intelligent and adaptive platforms and systems with and for industry

Hardware Prototypes and Solutions: To research and develop hardware enabled based solutions, with key focus on imbedded IoT, and ensuring industrial readiness

CONSULTING SERVICES

-Service Design & Development

-Supply Chain Design & Logistics Management

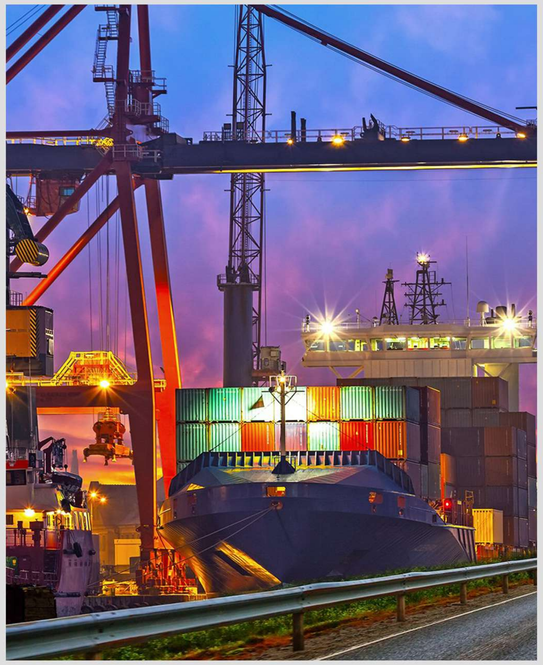
-IT System Selection & Management

-Information & Technology Management

-Order & Maintenance Management

-Network Integration

RESEARCH & SERVICES PORTFOLIO



Karachi and Gwadar Ports' Optimization to 4th Generation Operations

SIL is exploring new business avenues with Port efficiency in context of China Pakistan Economic Corridor (CPEC) and growing national requirements. SIL aims at developing new methods for planning, designing, controlling and optimizing Pakistani Ports. Benefits for the clients (exporters/importers) are short transportation time, better service and low cost. All together the expectations are to gain substantial societal and economic benefits compared to the overall investment. Advances in the field of Business Value Analytics provide an opportunity for a completely fresh and new application of optimization at a very large scale.

Railway Freight Transport Growth, Optimization and Planning

Exploring new opportunities with Port – Interland railway freight transport connectivity in context of China Pakistan Economic Corridor (CPEC) and growing national requirements. Our researchers aims at developing new methods for planning, designing, controlling and optimizing Pakistani railway freight transport. Benefits for the clients (exporters/importers) are short transportation time, better service and low cost. All together the expectations are to gain substantial societal and economic benefits compared to the overall investment. Advances in the field of Business Value Analytics provide an opportunity for a completely fresh and new application of optimization at a very large scale.

Active Fleet Management and Autonomous Tracking and Routing

Transport industry has gradually realized the importance of modern technologies in the practice of management and conduct of business. Drivers and fleet managers are continually striving to improve safety and productivity. Based on this, SIL has initiated research activities to introduce technology adoption frameworks for Pakistan's trucking and fleet management.

SCM Human Capital Development and Training platforms

Being complacent to gradual change is not an option. A well thought-out holistic, comprehensive and localized approach is needed to leap-frog ahead of the SC skill challenge and to deliver on CPEC and beyond.

Smart Industrial Zones and Logistic Linkages

Under CPEC, there are a number of industrial zones being established. These zones are being considered under Smart and light industrial networks with complementary industrial services that require intelligent and integrated logistics of holistic mapping of synergies. This initiative aims to research on the potential of smart logistic linkages across industrial zones

Swarm Intelligence for Energy Efficient Logistics

The project aims to study the efficient capability of physical cooperative swarm systems and their several sub-domains such as swarm robots and sensor swarms, unmanned vehicle swarm, swarm rescue robots. The outcome is to define a framework of physical sensor networks that consist of various sensor nodes, which have the capability to sense, process, compute, and communicate. The derived framework shall present the guideline to apply sensor nodes in different applications.

Mobile and Fixed Assets Tracking

Most organizations face significant challenges related to tracking location, quantity, condition and the depreciation status of their fixed assets. Ordinarily fixed assets are recorded and maintained in a spreadsheet, fixed asset register (FAR) or an ERP system. These records at this point are periodically verified through audit activities, such as physical inventory. To overcome all these ambivalent processes, SIL is investigating and proposing simple, consumer grade mobile solution to automate and streamline mobile and fixed asset inventory and reconciliation.

KEY RESEARCHERS

Dr. Ali Imtiaz

Dr. Ali Imtiaz is Associate Professor at Bahria University, head of Research Institute for Smart Integrated Logistics (SIL) and is leading the research cluster of Enterprise Logistics. He has profound experience in Top Tier Strategy and Management Consultancy, and management of large-scale international R&D projects. He holds a Doctorate in Industrial Engineering from RWTH Aachen Germany and is a member of Global Leadership Development Community of Harvard Business School and a member of advisory board of CELL Foundation Maastricht, The Netherlands. He combines knowledge and expertise from both industry and academia based on projects with global clients from private and public sectors; incl. DAX listed companies, GoP and European Commission. Dr. Imtiaz has also advised several leading conglomerates on developing, transformation and restructure their portfolio strategy

Dr. Saleem Aslam

Dr. Saleem Aslam is an Associate Professor at Bahria University, and is leading research cluster of IoT & Swarm Intelligence for Smart Integrated Logistics. He has experience in wireless sensor networks, Internet of Things, reconfigurable and adaptive communication systems. He holds a Doctorate in EE from Sejong University , Korea, and has one year Postdoc from Queens University, Kingston, Canada. He is a member of the International Association for Engineers and International Association of Computer Science and Information Technology. He also provided consultancy to Mobile Networks Lab Sogang University Seoul Korea on Internet of Things relevant projects. He is a vigorous reviewer of several IEEE, Elsevier and Springer Journals. His research focus is on innovation and challenges of the 5G cellular, WiFi & LiFi, Internet of Things , Industrial IoT and Industry 4.0 communication.

Dr. Sabeen Hussain

Dr Sabeen Hussain Bhatti is a Sr. Assistant Professor at Bahria University and is leading research cluster of Logistics Service Management for Smart Integrated Logistics (SIL). She has profound experience in R&D organizations. She holds a doctorate in Engineering Management and core area of research is innovation management. She went as a visiting researcher to University of Warwick, UK. She has published her research in international ISI impact factor and local journals both. Previously she received a Gold Medal in MS in Engineering Management. She has more than 14 years of academic and professional experience in both private and public sectors. She was focal person ORIC in a renowned university in Islamabad. She received Excellence Awards in recognition of exemplary work performance from Siemens and NESCOM. Furthermore, she was selected for numerous on-job trainings in Germany.

Dr. Hafiz Mushtaq

Dr. Hafiz Mushtaq is a Sr. Professor at Bahria University . He has experience in trade harmonization. He is an experienced training expert, trainer and management consultant He holds a doctorate in Management and core area is HRM & Organization Development. Prior to that he secured his MS Logistics & Operations Management from University of West London, and MBA from Sheffield Business School, Sheffield Hallam University. He is member of Royal Logistics & Operations Association, UK. Japanese Productivity Association and Productivity Association of Pakistan. He has work experience to his credit b in public and private sectors including corporate sector both in England and Pakistan. He is an active researcher and has more than 30 publications to his credit. His research focus is on networking, SME & Entrepreneurship, innovative logistics, fleet management, and Leadership Intelligent Integrated customers/users